MDOT Michigan Department of Transportation

OFFICE MEMORANDUM

DATE: February 6, 2008

TO: Region Engineers
Region Delivery Engineers
TSC Managers
Resident/Project Engineers
Region Construction Engineers

FROM: Larry E. Tibbits
Chief Operations Officer

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Engineer of Delivery

SUBJECT: Bureau of Highway Instructional Memorandum 2008-03
Materials Quality Assurance Procedures Manual Update

The Construction and Technology (C&T) Division has made revisions to the *Materials Quality Assurance Procedures Manual*. This was done to clarify protocol, reflect the current state of practice, and institute time frames for corrective action on unsatisfactory hot mix asphalt material's Independent Assurance Tests (IATs). All holders of record on file with MDOT's Publications Office will receive copies of the listed additions and revisions to the manual. Following is a summary of the changes:

Part E Independent Assurance Test Procedures –

10. HMA Mixtures IAT Program

10.1 Qualifications of HMA Mixtures IAT Technician

10.1.2 HMA mixture IATs will be conducted by the IAT technician. The IAT technician will either be the region HMA mix inspector (RMI) or an IAT technician who has been jointly recommended by the C&T Division's HMA Technical Services Unit and the region IAT coordinator. At a minimum, the HMA IAT technician must have successfully completed the QC/QA Qualification Course currently approved through Ferris State University.

10.2 Conducting HMA Mixture IATs

10.2.1 Tests covered by the HMA mixtures are listed in Section 10.4. An IAT for a Marshall testing protocol is not acceptable for a person that will be performing Superpave testing and vice versa. The IAT database will serve as the check on whether a technician has been through the appropriate IAT process for the HMA design method (Superpave or Marshall) for which they will be performing acceptance testing.

10.2.2 The IAT sample is obtained at the same time, location, and manner as the quality assurance sample for the project. The sample size will be twice the size of the typical quality assurance sample (30,000 g). The sampling will be performed by a qualified sampling technician.

10.2.3 The qualified sampling technician will split the IAT sample. The sample must be split before it cools down to avoid the need for reheating one portion of the specimen twice. This could possibly influence the test results. Both portions of the sample will be brought to the designated MDOT region HMA laboratory. The HMA testing technician, whom the IAT is being performed on, will test one portion of the sample (herein referred to as the field sample) in the same manner as the quality assurance samples for the project.

10.2.4 Equipment or procedural errors observed by the IAT technician during the IAT test will be noted on Form 1843. The IAT technician will make recommendation for pass/fail.

10.2.5 The IAT technician will submit, in a timely manner, the field test result(s) with the proper identification and the remaining portion of the IAT split sample to the C&T Division's HMA testing laboratory (herein referred to as the laboratory sample).

10.2.6 The laboratory and field sample test results will be tabulated using Form 1842 and transmitted to the project engineer, HMA testing technician, IAT technician, region IAT coordinator, and statewide HMA technical coordinator.

10.2.7 All IAT results will be reviewed by the C&T HMA Technical Services Unit. When an unsatisfactory test is reported, the project engineer, IAT technician, and region IAT coordinator will be notified by telephone or e-mail as soon as possible. This notification will be documented on Form 1842.

10.2.8 A follow-up IAT must be conducted within five working days of an unsatisfactory IAT to ensure that equipment and procedures are satisfactory. If unsatisfactory tests continue, the IAT technician will consult the region or TSC for action.

10.3 Frequency of HMA Mixture IAT – One IAT, meeting all tested parameters, per HMA testing technician, per year will be required. The IAT must be conducted early in the construction season and early in the acceptance testing process so deficiencies in testing or equipment can be reconciled.

10.4 Evaluating HMA Mixture IAT Results – In addition to the requirements in Section 6, the following limits should be used when evaluating HMA mixture independent assurance tests. All deviations outside these ranges are considered unsatisfactory and require action.

HMA Test	UNSATISFACTORY DEVIATION
Asphalt contents (MTM 325)	varying by more than 0.5%
Aggregate gradation	
1 inch (25 mm) to 3/8 inch (9.5 mm) sieve	+ or – 5.0%
# 4 (4.75 mm) to #8 (2.36 mm) sieve	+ or – 4.0%
#16 (1.18 mm) to # 50 (300 µm) sieve	+ or – 3.0%
# 100 (150 µm) to # 200 (75 µm) sieve	+ or – 1.0%
Crushed content	varying by more than 15%
Maximum Theoretical Specific Gravity	varying by more than + or – 0.019
Marshall Bulk Specific Gravity	varying by more than + or – 0.026
Gyratory Bulk Specific Gravity @ N_{DESIGN}	varying by more than + or – 0.020

Note: If it is apparent that inadequate or no inspection is being provided by the responsible tester, an unsatisfactory IAT should be reported with an explanation in the remarks section.

10.5 The statewide HMA technical coordinator for the IAT Program will prepare an annual IAT report. The report will include a section that describes the failure rates in the various areas, and the corrective measures to be taken to reduce these failures.

Current copies of the *Materials Quality Assurance Procedures Manual*, including revisions, may be ordered through the Publications Office at 517-322-1676 or by sending an e-mail request to MDOT-Publications@michigan.gov. It is also available to view, print, and download from MDOT's Web site under "Maps & Publications." Printed copies of this and other C&T publications will continue to be available through the Publications Office, and annual updates will be made via the instructional memorandum process. Only the most current content is available on the Web site. Superseded or deleted content is available only in printed format.

Questions concerning these revisions or the schedule of future revisions, may be directed to the Engineer of Specifications at 517-322-5669.

Chief Operations Officer

Engineer of Delivery

BOHD:C/T:SP:kab

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